Designing an elegant computationally efficient Pi-Space Physics Reality

By

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Overview

In recent publications Pi-Space has reverse engineered Classical Physics into Pi-Shells which are larger than the Planck length. Additionally, the Probability layer can also be represented by means of Pi-Shell field points or Probability Pi-Shells which are smaller than the Planck length.

In the Advanced Formulas section of the Theory many of the Classical Formulas are represented in terms of their Pi-Space equivalents. Typically, this is achieved in terms of quantifiable values with units. This does work but it is not elegant. The Einstein General Relativity work tries to improve upon this by formalizing the Gravity field using Tensor Calculus. This does work but it is computationally complex.

So in this document, I will propose a high level architecture which I regard as elegant. By this I mean it should be intuitive to implement and once it is implemented many of the properties in Physics we have named such as acceleration, velocity, distance, force and so on should just fall out from the calculations.

To achieve this effect, one much first create a Gravity and EM field layer based on field points smaller than the Planck length. Also one must them create another layer based on Pi-Shells which are larger than the Planck Length.

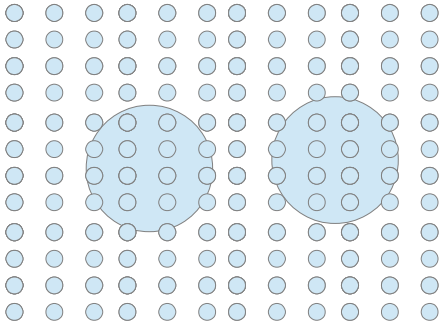
A Volume Containing Local and Non Local Pi-Shells

So the first step is to define a volume containing Local and Non Local Pi-Shells. The Non Local ones are smaller than the Planck Length. The Local ones are larger.

Now in Pi-Space we can use a simple principle we we can represent several Pi-Shells by one larger Pi-Shell.

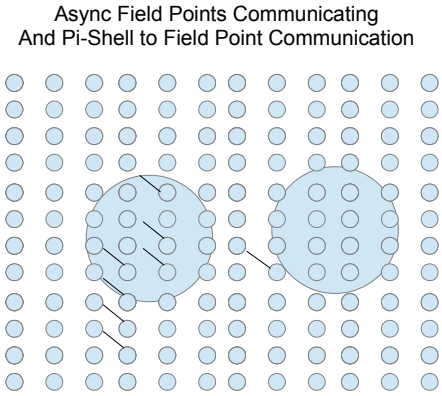
Therefore in a general sense, for a Computer Simulation what we need is for the Non Local Pi-Shells to be smaller than the local ones. For the simulation to be effective, they need to be a fraction of the size of the Local ones as they determine the direction that the Local Pi-Shell moves in and the granularity of space.

Two Local Pi-Shells inside Field Point Field



Messaging Model Driving Behavior

The Pi-Shells communicate with one another. In the world we live in atoms emit and absorb wave packets. In the Pi-Space world, Pi-Shells send each other discrete messages. Therefore, if a Local Pi-Shell contains 'n' Non Local Pi-Shells then they will message the Pi-Shell which represents the field communicating with the particle and vice versa. Also the Local particles will communicate with one another.



Mapping Messages to Pi-Shell Physics Properties

The field messages will contain information about the size and position of the Pi-Shell and other physical information. The Local Pi-Shell will aggregate them and use it to make decisions like which direction to move in and decide its new diameter. If it changes its diameter, it will inform the field Pi-Shells of this fact and then the Pi-Shells will themselves alter to converve field energy. Using a model like this, we can effectively model field effects like turbulence. This is a better model than the vector based one in my opinion as its dynamic and interactive.

Functional Software Technology

This design shall be implemented via a Functional Software solution using AKKA's Actor model which supports Concurrent messaging. The Actors themselves shall be Pi-Shells e.g. LocalPiShellActor and NonLocalPiShellActor.